Jiayou (Sam) Zhong

✉ zhongjiayou1204@gmail.com | 🌐 https://jiayouz.vercel.app/ | 🔗 JiayouZhong | 🔘 Samjiayou-github

Technical Skills

- **Programming:** C++, C, C#, DrRacket, HTML, CSS, Unity 3D
- **Data Analysis:** Python (Pandas, NumPy), R, SQL, Tableau, Advanced Excel

Education

University of Waterloo   *September 2022 – April 2026*
Bachelor of Computer Science, specialization in Business
- Awards: **Top 25%** of contestants in the *Senior Division* of Canadian Computing Competition
- Core courses: Object-Oriented Programming; Sequential Programming; Computer Systems; SQL; Statistics

Experience

Laurier Fintech   **Waterloo, Ontario**
Algorithm Developer – [Website | GitHub]   *October 2023 – Present*
- Implemented the backend algorithm of OpenFintech, a stock trading simulation tool in Python, leveraging the API for stock data integration, facilitating accurate backtesting of trading strategies
- Boosted trading accuracy by 40% by refining **trend-following stock trading** algorithms to integrate data, predicate stock price and generate various stock trend charts based on different requirements
- Improved efficiency by 30% through structuring a robust **SQLite3** database framework to manage user profiles, trade operations, and performance tracking

Uforse Education   **Toronto, Ontario**
Computer Science part-time Instructor   *May 2023 – Present*
- Guided and mentored several high school students to enhance their understanding of fundamental computer science concepts, algorithms, and prepare for computing contests
- Ensured thorough comprehension by offering detailed Python code walkthroughs and consistent feedback
- Through my mentoring, students achieved positions within the top 25% of the CCC competition

Projects

Algoherence Chatbot | *Python, Cohere & Alpaca API, Langchain, Streamlit – project link*   *February 2024*
- Integrated **Cohere Classify API** for identification of user-inputted stock tickers and share counts, coupled with **Alpaca API** for real-time market data retrieval
- Utilized **Cohere Embedding** and **RAG**, efficiently generates citations from over 1000 WebMD pages
- Engineered the predictive Chatbot backend employing **Mean Reversion** and **Moving Average Crossover** algorithms, forecasting stock profit for one-year investment

MIPS Assembler | *C++ – project link*   *January 2024*
- Extracted opcodes, operands, labels or directives from MIPS assembly instructions and build a symbol table
- Implemented **Bit-wise operations** and **Masking** techniques to translate text-based assembly instructions into binary form (machine code)
- Optimized in memory usage with a **Stack** frame to maintain the states during procedure calls and return

Chess | *C++ – project link*   *December 2023*
- **Winner of Object-oriented software programming project**
- Led a group of three to develop a C++ Chess game with two modes, Human vs. Human and AI vs. Human
- Implemented all the chess pieces including Rook, King, and Pawn with different moving strategies, especially en passant, promotion and castling strategies and defined checkmate and stalemate rules
- Attained a 30% winning rate of AI utilizing **Greedy** algorithm and **Reinforcement Learning strategy**